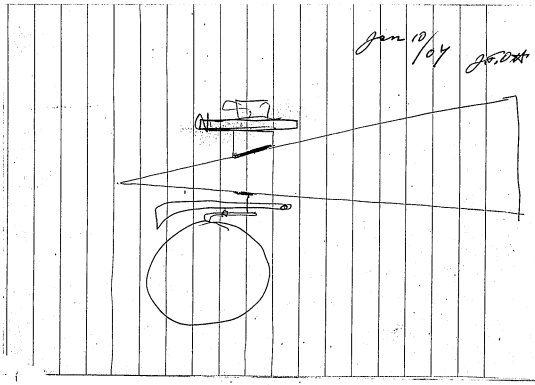
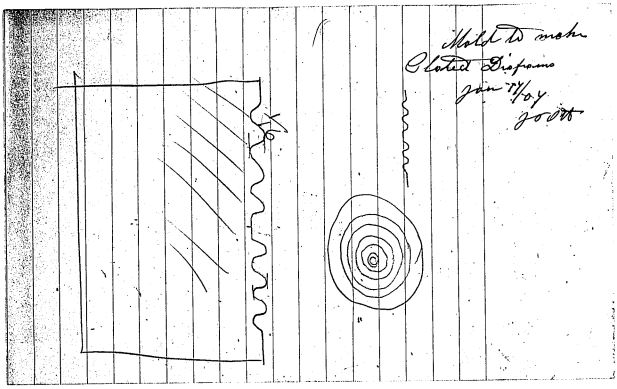
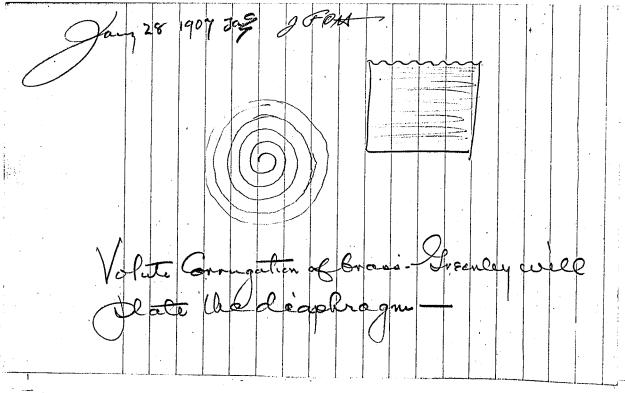
Unbound Notes and Drawings (1907)

This folder contains dated notes and drawings from 1907, as well as undated material possibly from the same year. Included are numerous notes from Edison to John F. Ott pertaining to storage batteries, phonographs, telephone devices, electric vehicles, and other matters. These items were probably written at Edison's winter home in Fort Myers, Florida, and then forwarded to the laboratory in West Orange. Also included are notes and drawings by Edison and Albert F. Wurth regarding Edison's kinetophone and various notes, memoranda, and calculations by Ott.

Approximately 80 percent of the documents have been selected. The unselected items consist of a manufacturing drawing for the Edison Phonograph Works and most of the material by Ott.

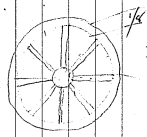

Jan 10/04


Model to make
Corrugated Diaphragm
Jan 27/07
J O Fox

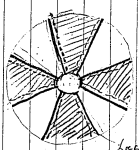

Jany 28 1907 Jas J O Fox
Volute Corrugation of brass - Greenley will
plate the diaphragm —

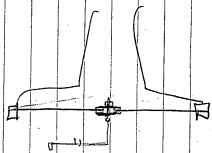
X03

July 28 1907 [illegible]



July 28 1907 [illegible]





Lap 15/1000 – Wear 2½ to 3/1000 steel –
get them flat – if can't get steel flat make
hard Copper .003 or aluminum 5/1000 –

X04

Jolmott

John Cantuse any larger dump than at present the larger ones don't give the results, - How close have you got the flake to dump kerry

March 25/07 E

up the Cans for Walter Archer

Mr Edison

We have the loading machine to work as close as we can make it, the following is the result

100 Dumps of Gun Nickle

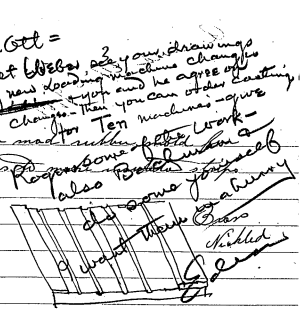
2390	2435	2460	2465	2410	2460	2460	2420			
2385	2400	2420	2405	2395	2395	2305	2310			
2400	2440	2500	2460	2410	2380	2330	2365			

10 Dumps of Gun Nickle

231	245	250	248	255	250	240	240			
240	250	250	260	252	250	246	244			
238	250	262	268	255	250	250	235			
245	240	252	250	255	248	254	244			
228	232	255	254	248	240	241	244			
225	238	260	256	240	250	245	246			

John Ott =

Let Webber see your drawings of new loading machine changes ~~[illegible]~~ and he agree on changes - then you can order castings. also mad for Ten machines - give Rogers ~~[illegible]~~ some work - also some work when I Rogers ~~[illegible]~~ also some forgings



The Rubber workers put the rubber in the tray and it with a roller to push out all the air then put on a flat plate then ~~[illegible]~~ rad, Yesterday

The loading machine is in good condition it works well do you want me to order the castings for another lot and have money? Yours truly

Jos. Ott

[ON BACK OF PRECEDING PAGE]

Received Ofrs 9/07

John Ott –

We are troubled with Grape fruit & I will send you a box so I will not worry so much about it, Hurry Cells to Walter Archer

C

I am held up for Cells (12)

Cans

I want 2 Cans for each grape fruit

Talinette =

I think the flake either falls faster than the green or the opposite if this is so, then we must arrange the dumping so that ~~one~~ the slow falling one goes in first, then they will reach the bottom both thoroughly mixed — something of the character to what you could change (or the cracker single machine) he could make 3 or 4 groups of best cells each with a different timing of the green keeping flake constant & thus you could find by tests which gave best capacity wing of course the same green

Edison

[POSTMARKS: MARCH 30, 1907 (FLORIDA); APRIL 2, 1907 (NEW JERSEY)]

Johnson —

There is another bug in the long tube which we must try and get around — If we dump flake and green at same time & they mixed & travelled to bottom of tube at same rate we should of course be OK — but if they fall at different rates which I am sure they do, then the longer the tube the more they will separate in distinct layers at the bottom, and then as we approach the top they will commence to mix and light near the top they will be OK & not in layers

If you can arrange the machine to vary the time as the tubes gradually fill up we should have to make one change at least in dumping — Have 1/2 the tube loaded one way of dumping " " " " then a change in the dumping times to start a fresh on the other 1/2. This we should have only 2 make where it gradually operates inside of 4 inches.

You should study out this not good too much on new machines —

Edison

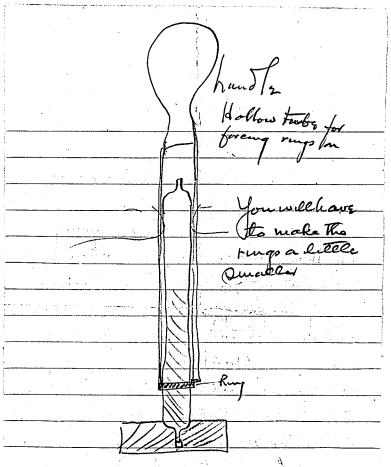
John Ott
Edisons Laboratory
Orange
N Jersey

John Ott -

I notice in tests that there is a little swelling up pockets on account of the rings not going on tight enough. Evidently when taken out of packing tube there is a slight opening to tube & this makes bad contact with sides please see if you can make Walter Archer a little holder & showing tool to hold tubes upright & above the rings on light the pressure being taken by Rounded Ends to tube,

OVER

[ON BACK OF PRECEDING PAGE]



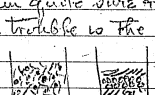
Edison

I will write Walker & tell him to make a test group to cells holes
You get up something for him —
E

(1)

John Ott =

As near as I can figure out the reason of long tubes packed in big machine have poor capacity per gram of green nickel is before you have not exactly imitated the dumping of the little machine, and the green is not distributed or well mixed with the flake but is in layers — a slight change in the dumping made great difference in the little machine — with the same mix old short tubes give 236 milamperes hours per gram of green when on same green in long tubes only give 174 milampere hours I can quite sure & almost positive the trouble is the dumping



Edison

John Ott =

(2)

Another reason why long tubes have poor capacity per gram is due to not mixing flake with green properly is shown by the tests — When a tube is loaded with the flake & green well mixed the flake being nickel. The first charge is about the best the 2nd 3rd etc does not improve the capacity but when you dump the flake in & then the green the 1st run is low & every run improves it up to 5 or 6 runs — This is because the green is so far from the flake that it takes time to penetrate & make it conducting so there is very little doubt but the dumping is such that the flake & green do not get as well mixed as in the little machine

John OCC = 3

I should say that the green + flake should start to dump at the same time and to take as long a time as the movements of the machine will permit + not come up + dump all at once. also when the flake is through dumping the green should finish dumping at exactly the same time as the flake + not before or after =

Edison

The machine does this exactly and cannot be made to do otherwise. There is not a hair's breadth diff in time of dump between large and small machine, and as for even feed it beats the small machine, that does not feed even the flake same times

John 4 John Ott -

You have not understood my letters at all. Read them more carefully E

I have just come across another proof that the trouble about flack of capacity is in the dumping

We have two qualities of green one gives in Regular tubes 200 milamp hours per gramme — the other quality gives about 230 milamperes

Now one set of long tubes containing the 200 milamperes green gave nearly that 191 but the other set of tubes having the 230 milamp green only gave 185 ~~milamps of~~ a better stuff ~~but~~ This green is more bulky & you had to make a new square dump cup — now we drop this you made it do it dumped wrong. ask Conlin tell him Reg green dumped ~~fair~~ but Jamaica not filtered low heat green dumped wrong

OVER

[ON BACK OF PRECEDING PAGE]

Takes only half load. The hopper becomes clogged and Walter has to stop flicker up to broke working, the cause comes across in big machine

you can then see what change you made which made the good green work than Regular

E

We found the diff in density and we made a set of slides for each grain so that we dumped 24 lbs Grams for dump, to prove that we were correct we filled the green hopper only and made 10 dumps then weighed it divided by 10 and 24 would come out each time within a small fraction, the green comes all mixed, as you can't expect — To take exactly 24 in each dump. It will be 24 then 23 then 25, but will even up.

[POSTMARKS: APRIL 10, 1907 (FLORIDA); APRIL 13, 1907 (NEW JERSEY)]

Johnott

we can ~~with~~ light our tramp
or get an increase in battery by
using the present tramp —

Yours truly
J. F. Ott

John the capacity and life
depend upon Contacts — a 3
lb weight does not give the
life or the Capacity of a 3½
lb weight — the new machines
should be at least 3½ lb weight

Also double tamps increase
the life & give 15 to 20% more
Capacity than single tamps

Sections of 10 plate & 20 plate
from now ~~[illegible]~~ but first sure —
10 plate 24 greenwell gives 6 cathodes

John Ott
Edison Laboratory
Orange
N. Jersey

[POSTMARKS: APRIL 13, 1907 (FLORIDA); APRIL 15, 1907 (NEW JERSEY)]

John Ott

John Ott = I notice long tubes made in the machine do not give increased capacity in proportion to their length and fall far below the capacity per gram = did they have double Tamps = if so then the rings are too loose or the weight too light The weight should be 3 ½ lbs & the rings go on tight = Did you make that tube tool for Walter so he could put rings on tight = as there is more elasticity to cushion the blow perhaps the height of the drop should increase gradually as the tube gets fuller – I don't suppose this can be done therefore we will probably have to use 3.75 to 4 lbs weight on the new machines – You should provide for place to add weight should we require it in the future

E

John Ott
Edison Laboratory
Orange
N Jersey

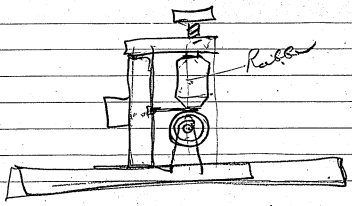
APR 19 1907 APR 19 1907

SEMINOLE LODGE
FORT MYERS, FLORIDA

Hooper – Better hours 5717 to 5737 assembled with worm on 4 circles – see John Ott about it – then turn them on board 2 or 3 times + put them on hat rack

9

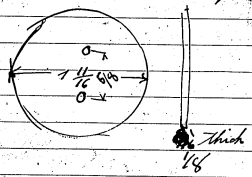
May 4/04 J.O.P.H.



Model call Nickle and Iron

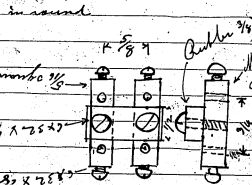
May 22/04 J.O.P.H.

Make Rubber top thus

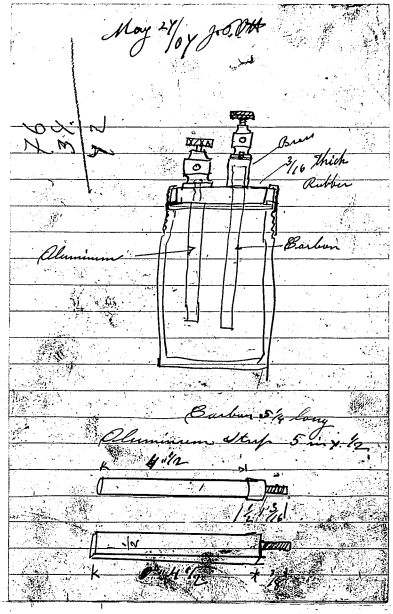


Cut out screw cover

1 1/4 in round

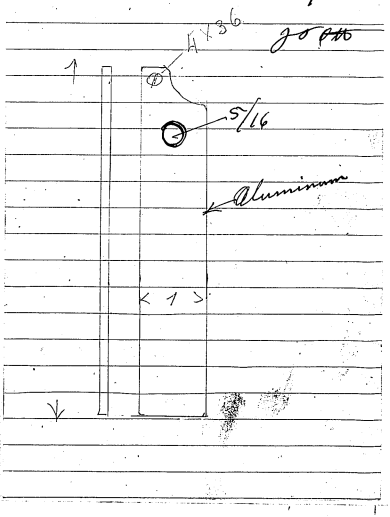


May 27/07 Jos Pitt



June 3/07

Jos Pitt

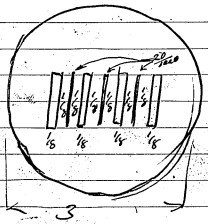


Antrifyer June 3/07

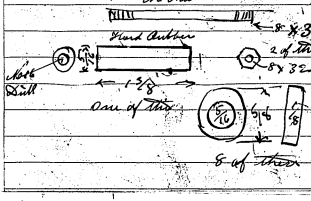
J.O.H.

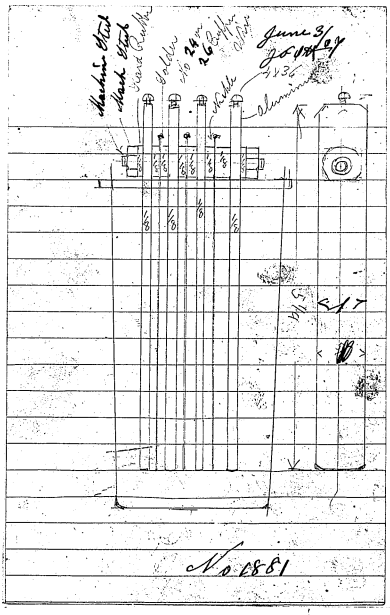
Hard Rubber cover 3/16 thick

3 in round



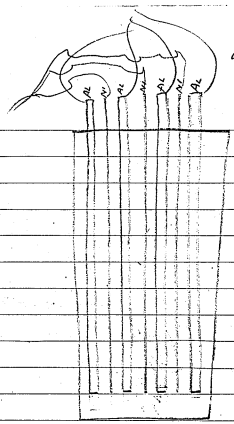
M Steel one of this





June 3/04

J. G. Pitt

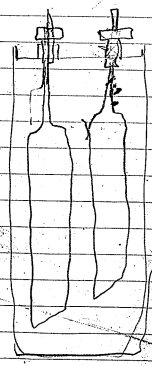


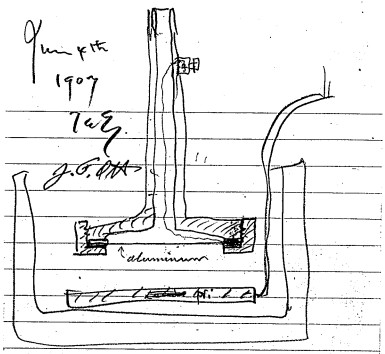
Strips 1" wide
Reaching to within 1/2" of
bottom of cell.
Jan 1881.

June 3/04

J. G. Pitt

John makes 1/2 doz Cells with
Rubber top. + only C P Ni strips
no iron used



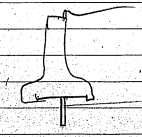


No 1919

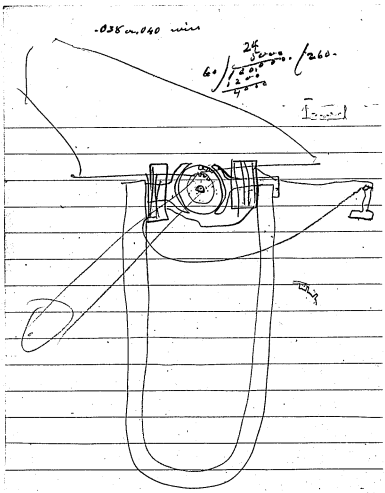
June 5/07

Aluminum diaphragm doesn't work

Change this —



Shellacd heavy all over the cone
except on the end



June 5/07

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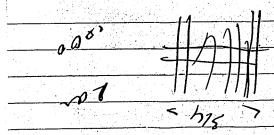
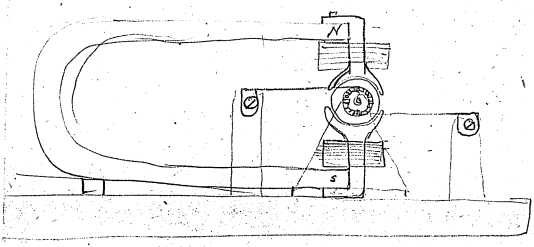
10 x 40 Shaft diam 0.192
Shaft " 0.125
Thus do the



June 5/04

Same as Phonoplex J. E. Watt



Armature 1/2 X 12 - 24 Silver Commutator -
5000 Per minute. Driven by Linen Thread -
from Phonograph Clockwork - Spools wound same
wire as on Phonoplex - Notched armature of punched
disks - No 40 Twisted silk
Covered wire double covered) -
Armature Edges off + dulled
before winding - or dipped in
Thin Celluloid dope -

Shaft 1/4 long 1/32 dia at
Bearings -

Telephone Repeater June 6/07

J.C.Off

Commutator — Slot with $\frac{10}{1000}$ Lower

450
314
1000
250
750
30) 78500 | 21,8
22
65
30
750
285
20

314
500
30) 15700 | 43,61
144
130
108
220
216
40

Armature

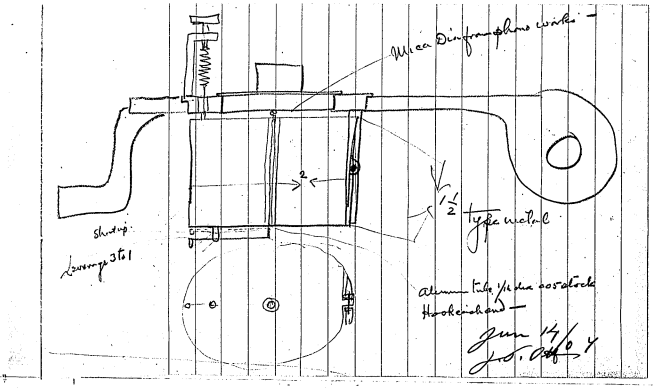
Slot with $\frac{40}{1000}$ Cutter

450
314
5000
500
2250
36) 22550 | 25,41
22550 | 25
216 | 40,41
1950
1800
150
144
60

47) 40,5
35
per ⅛

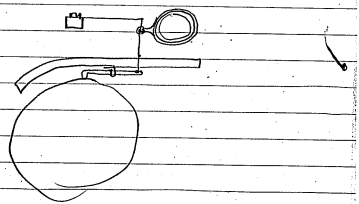
36
50
1,800

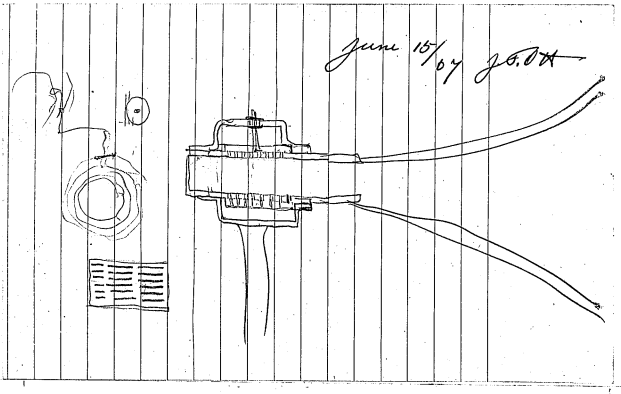
Turns 5 layers 4 # 20 turns each and two coils in each slot — 40 turns in each

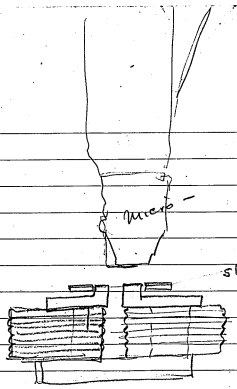

Mica Diaphragm
2
1/2
type metal
Shutter
Lever
aluminum tube
Hardwood

June 15/04 J. T. Ott

Loud talking reproducer by air pressure, or balance valve

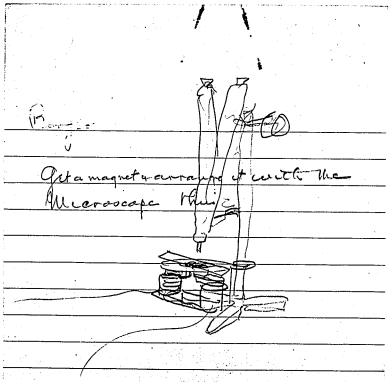



June 15/07 J.S.D.H



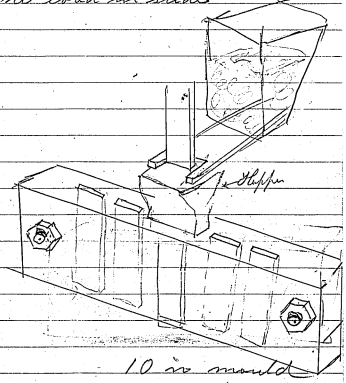
Attachment to Microscope to crystalize in the magnetic field

June 17/04 J.E. Hill



Get a magnet & arrange it with the Microscope thus

This will work all right ~~lamp~~ to knock out the load in slide



10 in mould

June 19/64 JOOA

36 - Divs
18 Cos

36 -

48) 750 (16
3
48) 2250
192
3
3

36) 2250 (62 -
216
9

24) 2250 (93 -
216
9

2

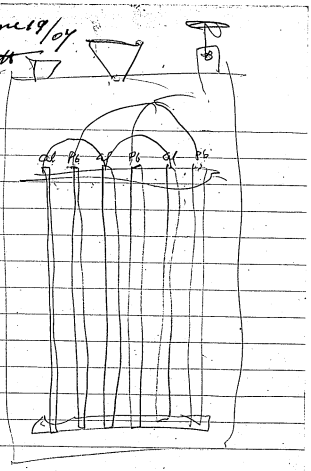
36 - Divisions

500
24) 1200 (25
120
80
48
40
120
120

2/40/65
35

June 19/04

20 oth



Rectifier 2 mm Quartz

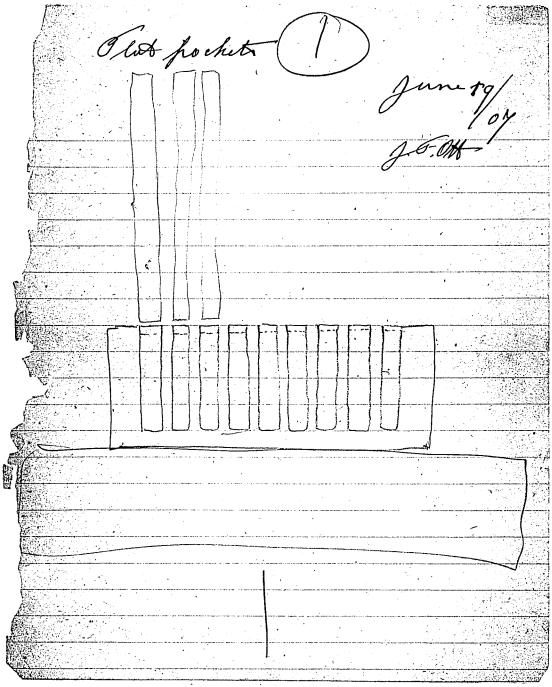
2 1/2 wide 4" long

1/16 thick

Cloth pockets (1)

June 19/04

J. F. Orr

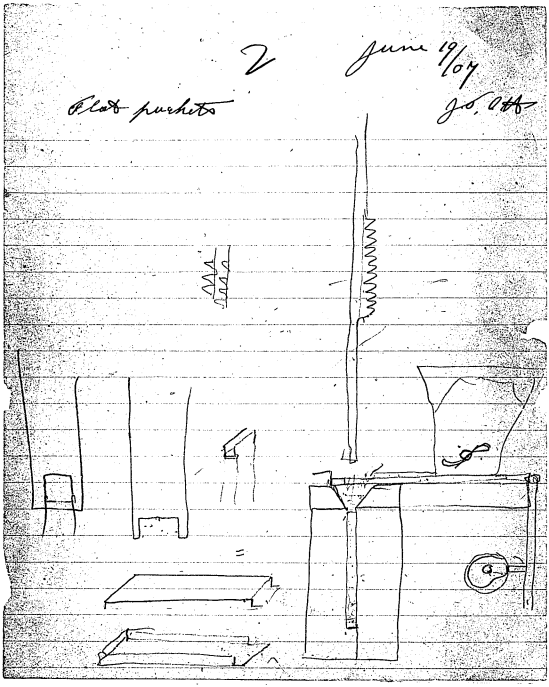


2

June 19/07

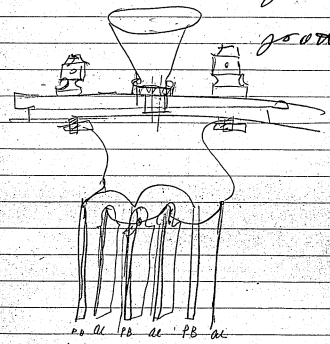
Flat pockets

J.S. Pat



Rectifyer

June 28
1904



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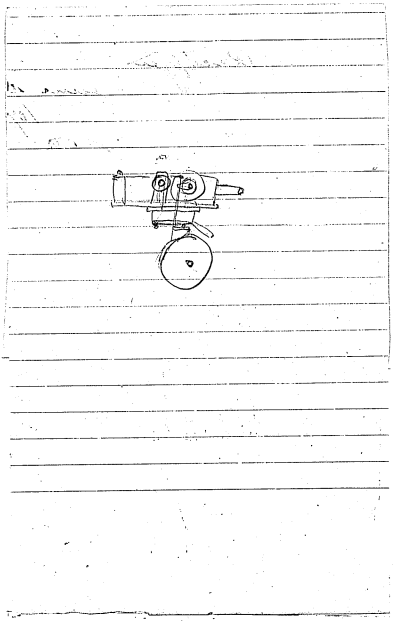
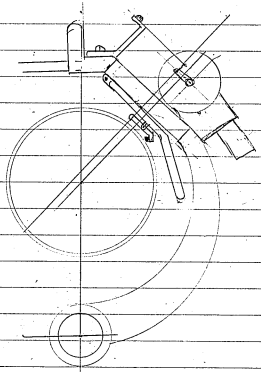
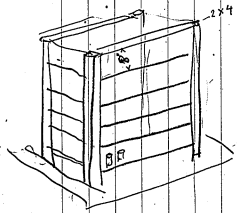
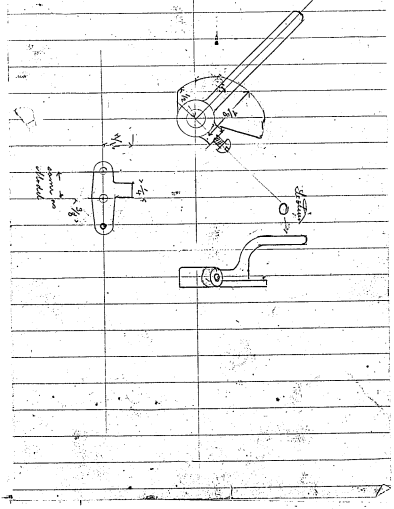


June 21 / 07

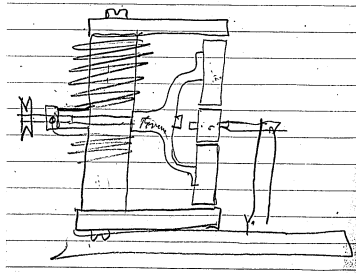




Cam lever for shaving off machine June 22/04 J.S.O'H

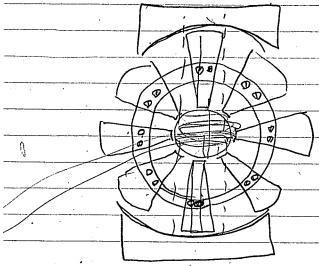


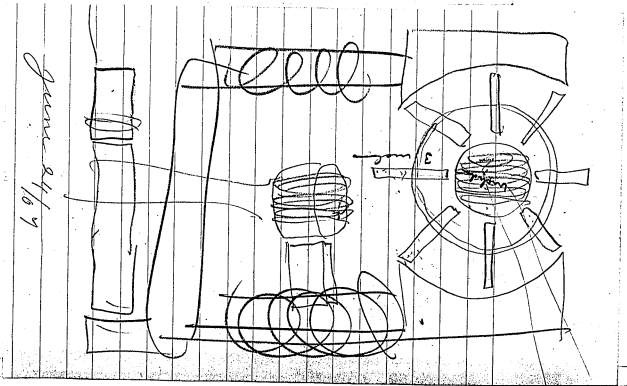
June 24/04. J.S. O'H

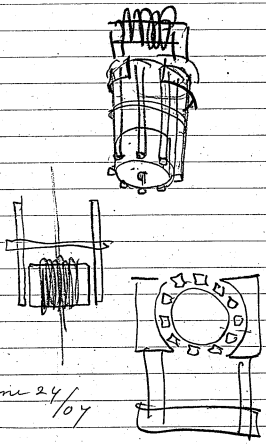


June 24/07

JOBA





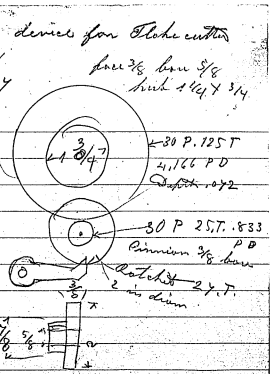


June 24/07

Feed device for flake cutter

June 24/07

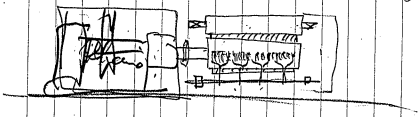
go off



Call 1/4 in throw

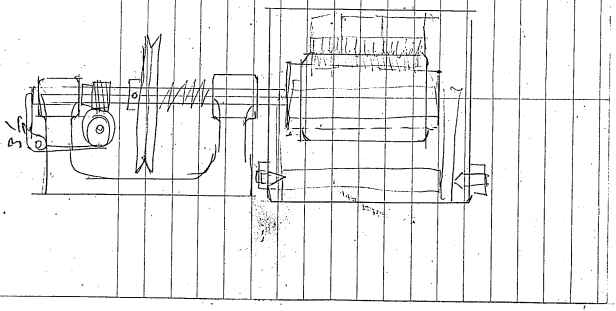
3/20 = 0.15
7166
57
999
233
166
167

Graphiting Mortar needs
to make moulds July 1/07
J. O. Bitt

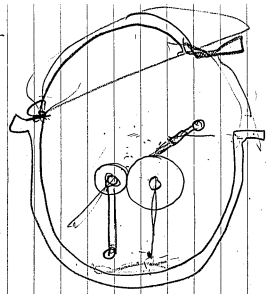


1941

Graphiting mortar needs to make moulds July 1/07
J. O. Bitt



Smokeless powder
recorder & smoke
recorder July 1/07
J. O. Ott

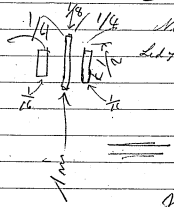


7-

Aluminum Rectifier

5 in high 1/4 in from
top and bottom of jar
and 1 in

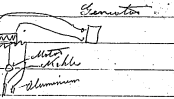
Aluminum 1/2 X 1/16



Nickle 30/1000
Lead & Antimony 1/8 thick

July 5/07
J. O. Ott

Connections



Sept 17 1907

Wurth -

Make experiment, connect Kinetograph to phonograph by a shaft of focal length of Kineto brain. Run the Kineto by a motor which is accurately governed then the phono being positively connected by the shaft will be in unison.

The shaft should have no torsion hence use 2" tube & good bearings.

A fly wheel quite heavy should be used on the Kinetograph

Edison

Projection
24 ft. Durchm.
20 ft.
Photographing
Water-table

30'
32'

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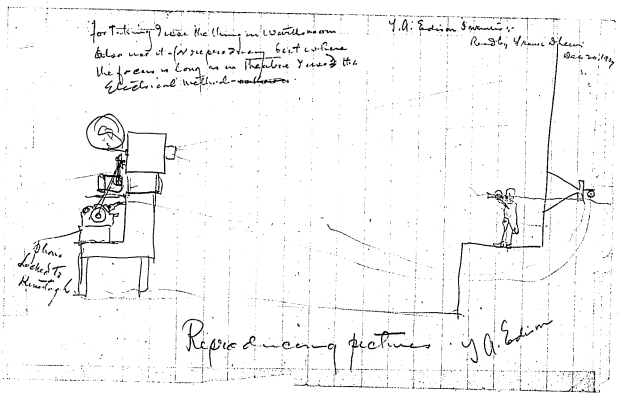
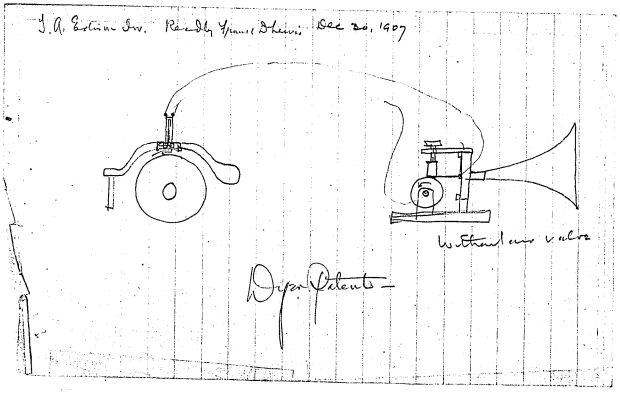
D
1907 M.P. - Gen.

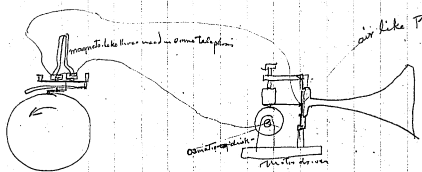

For Talking & seeing the Phonograph in a Waiting room
Color not at all necessary but would
the frame as long as in the picture & use the
Electrical method
T.A. Edison Inventor
Reading, Pennsylvania
Dec 30, 1907
Reproducing pictures. T.A. Edison

D
1907 M.P.-Gen.


T. A. Edison Inv. Recd by Simms & Stevens Dec 20, 1907
Westinghouse valve
Disp. Patents

J. A. Edison - Inventor

Rec'd by [illegible] Dec 30, 1907



Object of this invention is to reproduce at a distance electrically the sounds from phonograph records

The invention consists in the combination of a Magneto Telephone the diaphragm which is moved by the record sound waves of the phono & the reproduction of the sounds amplified at ~~the~~ a distant point by means of an instrument which gives motion by the electrolytic variation of friction to work a compressed air comb valve to reproduce the

Over

[ON BACK OF PRECEDING PAGE]

The sounds of the record – The apparatus is more particularly applicable to the production of moving pictures which are thereby caused to speak – a result as therein specified in addition of another application – Etc –

John O'C —

Help Halland on his dry Gallery Experiments —

Help Pearman to get a practical Vacuum apparatus —

Help Cosby in anything he wants for his Experiments —

Finish the Loading Machine —

Do anything that ~~test~~ man upstairs wants for the new test cells we have just made —

John Ott -

After you find out from Fred Ott

The best way of putting green in tubes - The best kind of holder for holding the small bits of plant & green - then go on board & change the Big Machine -

Do anything Newton wants to help along the Battery works across the Yard -

2

(1)

1st. make 20 cells of 15 plates each complete, or test in Baker Automobile —

The Nickel for this battery is to be made by Aylsworth, the proportions are to be 7 parts of nickel to 3 of purified Graphite also furnished by Aylsworth — The Nickel is to be run through the little pair of rolls six or eight times providing after each pass to break the flakes up — This grinds it very fine. I have made some today using considerable pressure, The flakes after wetting well & mixed with graphite rolled out easily & so fine that no nickel could be detected by the microscope on the graphite — as it would be a rather tedious job to crush enough with these little rolls — I suggest that the fine

rolls now used by Balantine. be taken apart & cleaned with Benzine - The rolls ground true in Universal grinder. Everything must be got very clean as the rolls will have to be put in a wooden pan & any dirt from burring ~~way~~ way go in the pans - look out for dirty driving belt arrange feed so that it feeds evenly - Better powder the nickel up to go through a 40 mesh before passing rolls - I suggest a small roller feed be used ~~[illegible]~~ the pressure should be enough to flake it - The nickel should be dry not moist -

Now as to rolling — Benson tried some experiments of mixing fine ground nickel graphite & water, & pressing between the rolls with a spring behind them, it did very well — I think it will be a tedious job to hand roll the whole so a pair of thick rim pulleys got from the mine anywhere from 20 to 30 inch diameter & 6 to 12 inch face should be put together & one rolled having the bearings fixed & the other roller having springs pressing against the bearings to get the proper pressure on the material — Cal Fried can make this

Simpkins can lay it out of doors —
or perhaps the mixing can be done with
the same roll that crushes the nickel —
in any event be sure the nickel is ground very
fine & well moistened so that after the
final mixing it shows no nickel under the
microscope & also do not mix it in such
a way that the flakes of graphite are
all broken up into finer flakes —

After mixing the whole should be dried
to a point where it is just right for
briquetting — a test briquette should be
made to ascertain the proper point.
Then immediately put in closed bottles

so no further drying can take place then when you are ready to mould the big bricks you will have it in the right condition —

Have Benson make the Briquettes on the bricking machine & as fast as made put in closed boxes to prevent Evaporation & drying so when you start to press them in big grid they will have right moisture & not be too dry —

Freddy Ott to do all this in connection with Brown —

Rafn is to see that furnace in barn is all right — make a preliminary test with ~~[illegible]~~ a cylinder as full as it should be = He is also to get a better dish or way to ignite the Oxalate of iron so there is no scales from the pan going into the Oxide — possibly Mr Rogers can make him a bent up dish of sheet nickel to be placed on sand bath or in an iron pan of same shape also made by Rogers to fit the nickel pan

The Nickel dart scale, it can be thin.
The iron pan can be made of heavy iron
the nickel pan just fitting inside —
I think the pan might be round & just
set over the hole in the top of one
of the brick furnaces in front room or
perhaps put in the muffle — The
Oxalate being stirred well until
thoroughly oxidized —
Rufus can get Dalley to make any
platinum thermometer he wants —
Shall need about 30 pounds of
Fe_2O for the 20 cells ——
Shall need 55 pounds of Nickel Oxide
also about 30 pound graphite

Hard Rubber — sheet stock & supplies are to be ordered by Rogers to make the 20 Cells — or as many as he can get stock for —

Aylsworth to get out the nickel & Oxalate may have to get an Extra man to run nights,

Rafw may also need to get another man to run Iron furnace nights —

It is preferable to make a 15 plate Cell 10 of nickel & 5 of Iron

This evens up the amount Each iron plate has to do better than any other Combination

If it is found impossible to get the stack for 20 15 plate cells - then make as many as possible with the stack that can be got =

There may be some trouble in getting the nickel plating done if we say to Mr Gilmore that I would like to have the plating works run nights for us - we paying the nickel plater an extra bonus + also any extra man that may be required —

The pressing in at Silver Lake should be done as far as possible without interfering with Mfg there as they are behind ardens - possibly we could use presses Sunday all day.

they are working nights now & can ~~dig~~ hardly spare pickers for any length of time as I understand it.

The Solder used on the Cans shaved 6z Cadmium Solder same as that used on little round ~~test~~ Cans in middle room — Its formula is I think 75 Cadmium 25 tin — Freddy Ott knows — Dont use ordinary solder as the Potash dissolves it

---

The Crates for holding Cells are not to be made until I return —

Horten =

Go ahead and take charge of the ~~[illegible]~~ placing and arranging of the Silver Lake Chemical Co works = Because since ~~[illegible]~~ seen that the work is carried on contrary upon instructions Order what is necessary through Mr Walling to carry out the plan as agreed upon between Myself & Fraylowarth, & advance the work as fast as possible & get everything in position ——

Push the furnace in the Barn for Rogers as he must make a lot of wax for the 20 cells of battery Rogers is making & has not got much time to do it — any changes he wants make them quickly

E

Fred Otto -

Dont fail to make the Rocking arm for bouncing the cell while being tested - Keep this test up right along & keep account of the material falling out, = Be sure in all future test grids & in big lot for 20 cells that the stuff is ground fine & rolled so no nickel can be seen in micro - The Balls are the best to grind nickel fine -

Read over the general instructions in regard to the 20 cells & help out as much as you can - Especially Benson on grinding & also mixing the nickel - The same plan found good for nickel will probably answer for the iron

E